



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,729	02/26/2004	Sumantra Chakravarty	030061 /QUALP825US	6099
70797 7590 01/24/2011 TUROCY & WATSON, LLP 127 Public Square 57th Floor, Key Tower Cleveland, OH 44114				
EXAMINER MURPHY, RHONDA L				
ART UNIT		PAPER NUMBER		
2462				
NOTIFICATION DATE		DELIVERY MODE		
01/24/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket1@thepatentattorneys.com
hholmes@thepatentattorneys.com
fgraziano@thepatentattorneys.com

Office Action Summary**Application No.**

10/788,729

Applicant(s)

CHAKRAVARTY ET AL.

Examiner

RHONDA MURPHY

Art Unit

2462

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the appeal brief filed on 10/11/10, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Seema S. Rao/

Supervisory Patent Examiner, Art Unit 2462.

Response to Arguments

2. Applicant's arguments, see page 14, filed 10/11/10, with respect to the rejections of claims 1, 8, 15, 17, 18, 20, 21 and 26 under 35 USC 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of a new prior art reference.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 7, 8, 13, 15, 17, 18, 20—23, 25, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil (US 7,593,449) and Yoshida et al. (US 5,734,647).

Regarding claims 1, 15, 18, 21 and 29, Shattil teaches a method for reducing cross-polarization interference in a wireless communication system (*Fig. 16*), comprising: generating first data to be transmitted from a first transmission terminal (*col. 22, lines 51-58; further described in col. 44, lines 18-20; multiple transmitters*); encoding the first

data with a code at the first terminal to produce a first long encoded signal (*col. 49, lines 57-59: each code symbol may be provided to each of a plurality of transmitters*); applying a first polarization to the first encoded signal to produce a first encoded, polarized signal (*col. 49, lines 60-63*); generating second data to be transmitted from a second transmission terminal (*col. 22, lines 51-58; further described in col. 44, lines 18-20; multiple transmitters*); encoding the second data with a code at the second terminal to produce a second long-encoded signal (*col. 49, lines 57-59: each code symbol may be provided to each of a plurality of transmitters*); applying a second polarization to the second encoded signal to produce a second encoded, polarized signal (*col. 49, lines 60-63*); transmitting the first and second encoded, polarized signals from the first and second transmission terminals, respectively, to at least one destination (*col. 30, lines 52-57*). Shattil further teaches a computer readable storage medium executing the above method in col. 102, lines 35-40.

Although Shattil teaches encoding first data and second data with a code (*each of the code symbols provided to the transmitters: col. 49, lines 57-59*), Shattil fails to explicitly disclose the code as the same *long* code.

However, Yoshida teaches encoding first data and second data with the same long code (*col. 9, lines 2-5: the same elongated spreading code is input for both the I and Q signals - see Fig. 4*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Shattil's method by incorporating the teachings of

Yoshida, for the purpose of providing a longer code length for reducing signal interference.

Regarding claims 2 and 22, Shattil and Yoshida teach the method of Claim 1. Shattil further teaches orthogonalizing plural sub-channels of each of the first and second data by applying respective plural mutually distinct Walsh codes in each sub-channel (col. 32, lines 6-8).

Regarding claims 3 and 23, Shattil and Yoshida teach the method of Claim 2, wherein Shattil further teaches the orthogonalizing step includes: applying different Walsh codes to different respective data originating from different respective users of the communication system (*col.59, lines 4-9*).

Regarding claims 7 and 25, Shattil and Yoshida teach the communication method including the transmission method of Claim 1. Shattil further teaches comprising: receiving the first and second long-encoded, polarized signals (*col. 47, lines 11-16*); separating the first long-encoded, polarized signal from the second long-encoded, polarized signal in accordance with their respective polarizations to produce a first long-encoded communication signal and a second long-encoded communication signal (*col. 47, lines 19-26*); applying the long code to the first and second long-encoded communication signals to produce the first and second data (*col. 47, lines 19-26*).

Regarding claims 8, 13, 17, 20 and 26, Shattil teaches a method of demodulating first data transmitted from a first transmission source and second data transmitted by a second transmission source (*col. 30, lines 52-59*), the first data transmitted as a first encoded, polarized communication signal having a first polarization and the second

data transmitted as a second encoded, polarized communication signal having a second polarization (*col. 49, lines 51-59: each code symbol may be provided to each of a plurality of transmitters; col. 49, lines 60-63*) the method comprising: receiving the first and second encoded, polarized communication signals (*col. 47, lines 11-16*); separating the first encoded, polarized communication signal from the second encoded, polarized communication signal in accordance with their respective polarizations to produce a first encoded communication signal and a second encoded communication applying a long code to the first and second long-encoded communication signals to produce first and second decoded signals (*col. 47, lines 19-26*); applying a first orthogonal code to the first decoded signal to produce the first data (*col. 50, lines 44-50*); and applying a second orthogonal code to the second decoded signal to produce the second data (*col. 50, lines 44-50*). Shattil further teaches a computer readable storage medium executing the above method in *col. 102, lines 35-40*.

Although Shattil teaches encoding first data and second data with a code (*each of the code symbols provided to the transmitters: col. 49, lines 57-59*), Shattil fails to explicitly disclose the code as the same *long* code.

However, Yoshida teaches encoding first data and second data with the same long code (*col. 9, lines 2-5: the same elongated spreading code is input for both the I and Q signals - see Fig. 4*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Shattil's method by incorporating the teachings of

Yoshida, for the purpose of providing a longer code length for reducing signal interference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/
Supervisory Patent Examiner, Art Unit 2462

Rhonda Murphy
Examiner
Art Unit 2462

Application/Control Number: 10/788,729
Art Unit: 2462

Page 8

/R. M./
Examiner, Art Unit 2462